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ADVANCED IMPRESSION TAKING

SCIENTIFIC AND CORRECT METHOD
BASED ON PRINCIPLES FOUNDED BY Drs. GREENE

ROBERT H. LIEBERTHAL, D.D.S., M.D.

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ADVANCED IMPRESSION TAKING

SCIENTIFIC AND CORRECT METHOD BASED
UPON PRINCIPLES FOUNDED
BY DRS. GREENE

BY
ROBERT H. LIEBERTHAL, D.D.S., M.D.

WITH FORTY-THREE
HALF-TONE ILLUSTRATIONS



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Robert H Lieberthal

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DEDICATED TO
DRS. PETER THOMAS GREENE
AND
JACOB WESLEY GREENE

WHOSE PATIENT ENDEAVORS HAVE STIMULATED
KEENER STUDY OF A MUCH NEGLECTED
BRANCH OF DENTISTRY

PREFACE

This book is an earnest effort to make plain the principles and outline the technic of Scientific Impression Taking. The author's efforts are centered in minutely explaining in detail the Advanced Method of Taking Scientifically Correct Impressions, Based on the Greene Principle. The author takes this opportunity to pay especial tribute to the Fathers of Successful Impression Taking.

A complete and concise system has been arranged eliminating steps which are unnecessary and confusing.

In order to place before the profession a subject so important as is this branch of dentistry, it is necessary that the principles of technic be firmly established, to avoid even the slightest confusion in following this method.

Careful observation prompts me to say that the dental profession at large knows very little about the Advanced Method of Taking Scientifically Correct Impressions. Why? For the

very good reason that in 1895 the Drs. Greene first perfected this method to a degree where it was ready to be brought before the dental profession. Unfortunately both gentlemen at that time were well along in years, 57 and 67, respectively, and being engaged in general practice, had very little time to devote to the teaching of their method to the dental profession in general, except occasional clinics, demonstrating usually by the taking of an impression of their own mouth. In 1907 the Drs. Greene gave up their private practice to enable them to devote their entire time to the teaching of their method. Unfortunately Dr. Peter Thomas Greene died in February, 1909, which left the entire task upon Dr. Jacob W. Greene, aged 70, and most unfortunately he departed from his earthly home in 1916.

Since then a number of attempts have been made to render instruction in this important branch of dentistry by persons not thoroughly conversant with all the fundamental principles. This naturally has caused a certain skepticism to be thrown about the method by those who unfortunately have been victims of such ill-advised attempts.

The success which attended the work of the

Drs. Greene, however, can be equally yours, if you will follow the method here outlined, which is based on the Greene Principle and simplified to assure its correct application.

INTRODUCTION

“Every art has its own methods of training, its distinctive discipline, its secrets of experience and skill; and mastery depends upon practice of these methods, submission to this discipline, possession of the fruits of this experience and command of this skill. Between the untrained man and the artist, in every department of creative work, there must be an educational process *severe and prolonged*. This necessity is imposed on men of genius no less rigorously than on men of talent.”—HAMILTON WRIGHT MABIE.

The inaccurate and uncertain results obtained in denture work by plaster impressions is in itself sufficient justification for the study of a more accurate system of impression taking. It was this recognition which led the Drs. Greene to the discovery of a system of accurate impression taking by the Modeling Compound Method. Such a radical departure in the method of taking impressions as the Drs. Greene proposed met with the usual suspicion, jealousy and envy, which has accompanied advanced methods in the past; but the courageous persistency of the founders

in the face of these difficulties has resulted in its recognition by the leaders in the dental profession as a much improved method for denture work.

Of the many inventions and discoveries for the convenience of mankind which the last century produced, this method of the Drs. Greene is by no means a trivial one. Many individuals suffered untold discomforts with the old fashioned plates, which depended upon suction for retention, with the resultant effect that the plate seemed to ride all over the mouth and eating and conversation became a hardship instead of a pleasure. Until recently this was the only known method to the dental profession. The new system, expounded concisely within these pages, enables the production of a better fitting plate with the added advantage of a more *natural* response to the movements of the jaw and teeth. Guesswork is entirely eliminated. Accuracy is readily attained, but a close study of its basic principles and constant practice are essential.

The broad possibilities of this advanced method are even yet dimly comprehended by those who have not given it careful study. It has passed the evolutionary stages and is now recognized as a science. In the light of our present knowledge

most of the theory as well as the practice of even a few years ago seems strikingly crude. Now, however, some of our best colleges are establishing chairs for the study of plate prosthesis in accordance with this advanced method. A field, almost limitless in extent, awaits the student and practitioner who will give close application to the study and practice of this scientific method of impression taking.

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ADVANCED IMPRESSION TAKING

CHAPTER I

FULL UPPER IMPRESSIONS

FIRST we will treat with the full upper mouth or jaw only. Make a plaster model of the jaw to be fitted, and select a tray nearest in size, as shown in Figure No. 1.



FIG. No. 1

Showing plaster model of jaw to be fitted and tray for same

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Shape the tray as follows: Place tray on model, turn Bunsen flame on tray, moving flame over surface of tray until it becomes soft enough and shows signs of adapting itself to model, as shown



FIG. NO. 2

Showing tray on model with flame moving over full surface of tray

in Figure No. 2. Wet fingers and form tray to model, using only slight pressure. Dip model with tray on it in cold water and remove tray. It is now ready to be trimmed as to the height of rim and length in rear. This is accomplished by passing the edge of tray over the flame, as

shown in Figure No. 3, and in this semi-soft condition it may be cut with a pair of small scis-

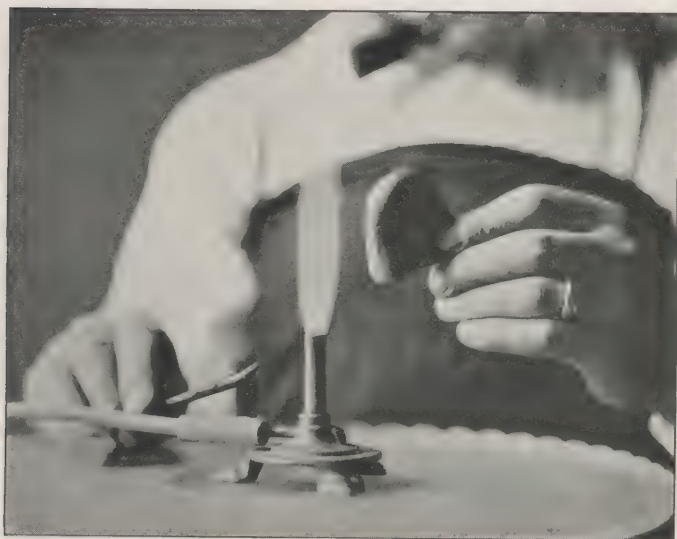


FIG. NO. 3

Heating edge of tray over flame before cutting

sors to the desired height and length. Caution should be used in cutting or trimming of tray as a poorly fitted tray will hamper greatly the work of muscle trimming. It is necessary that the muscles (or labial and buccal frenae) have free play to enable their reproduction in the soft compound while in function. Be sure then to trim tray so that it will not strain the tissues,

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as shown in Figure No. 4. The fitted tray should be at least an eighth of an inch shorter all around



FIG. No. 4
Method of trimming tray

than the proposed plate. Try the tray in the mouth and see that it does not encroach upon the

tissues or muscles, as shown in Figure No. 5. A properly fitted tray will stay in the mouth,



FIG. No. 5

Showing trimmed tray with accurate reproduction of palate and ridge of model

and unless it does it requires more trimming.¹

The compound should be immersed in hot water. Heat water to the boiling point, remove from flame and it will then be ready to receive

¹ The tray referred to is made of a composition which will withstand the required amount of heat necessary to soften compound and still retain its rigidity without changing form and is known as Dr. Lieberthal's Nometal Impression Tray. The Greene soft aluminum tray is easily swadged on a model made of artificial stone.

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the compound. The best compound is Kerr's Perfection Impression Compound, owing to its uniform qualities. Form the soft compound



FIG. No. 6

Compound in form of ball heated over a flame to be attached to tray

into a ball and heat one side over a gas or alcohol flame until it sizzles, as shown in Figure No. 6. Attach the side so heated to the tray and with wet fingers shape the soft compound into a cone in the center of the tray; a depression

all along where the alveolar ridge will come; and a relatively high rim to go up under the lip and cheeks, as shown in Figure No. 7. A small piece

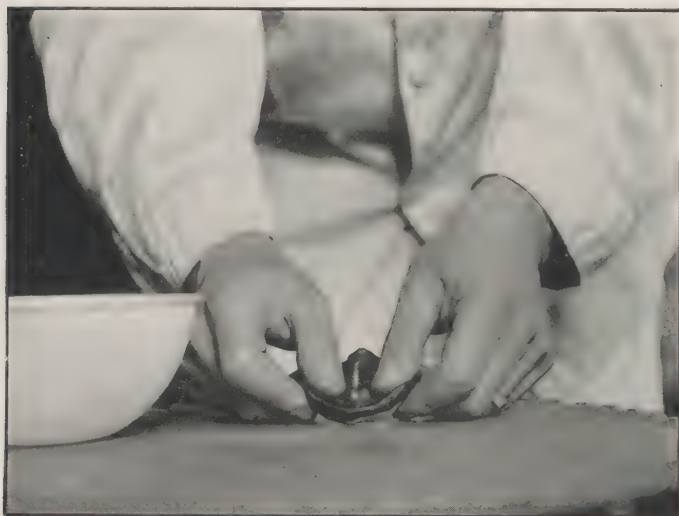


FIG. No. 7

Compound as it should be formed in tray

of compound is stuck fast to the tray to serve as a handle for the first insertion. (After the first insertion simply break off handle.) Heat the entire surface of compound over alcohol or gas flame and dip surface of compound into hot water, which will serve to equalize the heat and avoid discomfort to the patient, as shown in Figure No. 8. The tray with compound so prepared

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should be quickly inserted into the mouth and with a slight wave-like up and down motion press impression to place. Insert finger into the



FIG. No. 8
Heating impression over flame

mouth and press rim of compound on labial and buccal surfaces upward against the ridge, as shown in Figure No. 9. Cool compound by means of cold water sprayed into the mouth and remove what we will speak of as our preliminary impression. The margins of the impression as it first comes from the mouth, are generally thick



FIG. No. 9

Manner of pressing compound on labial and buccal surfaces upward against the ridge. This eliminates, to a certain extent, the necessity for adding compound to the rim for muscle trimming

enough to distend the tissues of the lips and cheeks. Where this condition exists it is essen-

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tial to trim the margins after the manner shown in Figure No. 10, until they are of the thickness



FIG. No. 10

How margins are trimmed when they appear to affect the facial expression

desired in the finished denture and give the patient the desired expression.

The preliminary impression is now ready to receive the bite block. Shape a roll of soft compound¹ and attach it to ridge of tray. Heat the center of one side until it sizzles and attach the side so heated to anterior portion of ridge of tray and in like manner attach both ends in con-

¹ The best results are obtained with KERR PERFECTION IMPRESSION COMPOUND.

dyle region, as shown in Figure No. 11. Shape occlusal edge of the roll to form somewhat of a wedge (which we will speak of as bite block).



FIG. No. 11

Showing how roll of compound is attached to ridge of tray

Soften occlusal surface of bite block over flame, insert impression with softened bite block attached into the mouth, and instruct patient to swallow and bring jaws together until the lips touch in repose, as shown in Figure No. 12. It is advisable *never to use the word bite* when instructing patient during the procedure of bite

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taking. The act of deglutition will automatically establish a correct bite. Cool and remove.



FIG. No. 12

Impression with bite-block attached, in mouth after patient has swallowed and brought jaws together until lips touch in repose

Cut away compound on occlusal surface until only slight indentations remain of opposing teeth. The preliminary impression is now ready to be converted into a finished impression. Place impression in the mouth and instruct patient to

close in correct bite and raise the lips so a clear view can be had of the rim of impression, as



FIG. No. 13

Inspecting rim of impression as to height

shown in Figure No. 13. That portion of rim which extends well up into the soft tissues will be high enough for muscle trimming. Wherever the rim is found lacking in height, compound

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should be added by using the stick and tracing on to proper height. Having thus established



FIG. NO. 13 A

Showing bite-block after compound has been trimmed so that only slight indentations of opposing teeth remain

the correct bite, as shown in Figure No. 13A, the next step is to equalize the pressure on the soft and hard tissue. This is accomplished by warming the palatal surface of the impression over alcohol or gas flame, dipping the surface so heated in hot water, inserting impression into the mouth without pressing impression to place, instructing patient to close in correct bite, while

the operator holds the impression in the region of six fronts, and presses firmly against ridge which will serve to prevent impression from sliding forward. The jaws must be held firmly together for a minute or two until compound becomes hard. The above properly executed will bring equalized pressure to bear under normal biting stress in every case.

MUSCLE TRIMMING OF UPPER IMPRESSION

From condyle to fraenum on one side of impression soften rim of compound by passing over gas or alcohol flame. Dip softened rim in hot



FIG. No. 14

Passing impression into mouth holding the cool side, thereby permitting adjustment of warm side without distortion

water to equalize heat, quickly pass impression into the mouth (cool side first to prevent distorting soft rim), as shown in Figure No. 14, in-



FIG. No. 15

Grasping lip at medium line between thumb and index finger, drawing lip together as in whistling position

struct patient to close in correct bite and draw the lips forward as in whistling position and backward as in extreme smiling position. This is repeated two or three times successively. In

cases where patient is not capable to make lip movements the operator can accomplish the same



FIG. No. 16

Stretching lip backward as in extreme smiling position

by grasping the lip at medium line between the thumb and index finger, as shown in Figure No.

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15, drawing the lip together and stretching lip backward as in whistling and extreme smiling position, as shown in Figure No. 16. Cool thor-



FIG. No. 17

Showing how compound which is curled downward is trimmed away

oughly by means of spraying cold water on compound. Remove impression and muscle trim opposite side in like manner. The next step is to establish palatal length and proper adaptation. Soften compound at rear of palatal portion by passing over alcohol flame. Dip into hot water, insert impression into the mouth, and

instruct patient to close in correct bite, and swallow. Cool thoroughly and remove impression. That portion of compound which has markedly curled downward should be cut away, as shown in Figure No. 17; having thus established the rear length, the margin so cut is slightly warmed over gas or alcohol flame. Again insert impression in the mouth, instructing patient to close in correct bite, and with the tongue pressed up firmly at the rear for a minute, the compound having become partly cooled, the patient is asked to open the mouth, and, with index finger being wet with cold water, press margin against rear of palate, at the same time holding impression to place. Cool thoroughly and remove. Dip the rim of impression into hot water, quickly insert into the mouth, instruct patient to close in correct bite, bringing pressure to bear in molar region for masseter reproduction, and immediately open the mouth sufficiently to permit the operator with thumb and index finger to draw the cheeks inward; then releasing pressure and repeating once or twice, as shown in Figure No. 18. This will serve to adapt the margins by means of normal cheek pressure. The author does not approve of massage, which at best is only guess work, for the reason that massage is dependent

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upon pressure with no guide as to the amount of pressure to be used for the individual case. Cool



FIG. No. 18

Open mouth permitting operator with thumb and index finger to draw cheeks inward. This should be repeated once or twice

impression and proceed with "Masticating Fit Test." Saturate a piece of cotton or tissue paper with cold water, insert it into the mouth, and

ask patient to chew as though food were being masticated, biting in region of anterior teeth as well as posterior. If the impression does not come loose as a result of the above test, the impression is correct. A denture duplicated from such an impression will prove very satisfactory. Should the impression come loose during "Masticating Fit Test," corrections should be made with the cause as a basis, viz.: in the case where impression comes loose or drops while biting on the front teeth the fault will be found to exist in the rear third of the vault (extreme rear of palate); cause: too short or faulty adaptation; this condition or any other that may cause impression to come loose is corrected with precisely the same technic as outlined in muscle trimming. Simply heat portion to be corrected, insert impression into the mouth and instruct patient to close in proper occlusion and proceed with muscle trimming for correction. After impression has stood the "Masticating Fit Test" mark on labial surface of bite block a perpendicular medium line and horizontal high and low lip lines before removing impression from mouth. This will serve as a guide for mounting on articular.

The foregoing applies to the case that presents practically normal conditions of ridge,

palate, etc. This type of case we will speak of as Class A, as shown in Figure No. 19.



FIG. NO. 19, CLASS A
A normal upper jaw

Class B is that case which presents the following conditions: Extreme hard centre of palate



FIG. No. 20, CLASS B

Showing extreme hard center of palate with a mound or lump which in this case is connected directly with muscles of deglutition

with a mound or lump which sometimes is connected directly with muscles of deglutition, as shown in Figure No. 20.

Class B cases are treated precisely the same

as Class A with the added technic as follows: After the equalizing of pressure under normal biting stress has been accomplished, warm over alcohol or gas flame that portion of the impression which constitutes the mound or lump. *Do not dip in hot water.* Insert impression into the mouth and instruct patient to bring jaws together firmly in correct bite, exerting extreme pressure and holding the jaws in this firm position for at least a minute or two. The compound being soft in the region of the mound or lump, when pressure is brought to bear, the soft tissues yield to the pressure of the hard compound and you have accurately created sufficient relief as per the requirement of the individual case. The author does not approve of mechanical relief in these cases. Where the muscles of deglutition are connected directly with the mound or lump the foregoing technic permits the finishing of the rear of the impression directly on the hard mound or lump.

Class C is that case which is practically the reverse of B in that the entire palatal surface is very soft and spongy, as shown in Figure No. 21.

Class C cases differ in technic only in so far as it is necessary to compress or displace the spongy, soft tissue. This is accomplished by warming



FIG. No. 21, CLASS C
Soft and spongy palatal surface

that portion of the impression which constitutes the alveolar ridge over alcohol or gas flame and permitting the heat to penetrate the compound

before inserting impression into mouth (after ridge portion of impression has been passed over flame twice, wait about half a minute, during which time the heat will penetrate), immediately pass impression into the mouth and instruct patient to close in correct bite, exerting extreme pressure and holding the jaws firmly closed for at least a minute or two until the compound becomes hard. By carefully applying the above technic the spongy tissue will be compressed or displaced under normal biting stress.



FIG. NO. 22, CLASS D
A soft and flabby ridge in the anterior region

Class D is that case which presents a very soft, flabby ridge, as a rule, in the anterior region, but sometimes is confined to only one side of the jaw

in the region of bicuspid and first molar, as shown in Figure No. 22.

Class D cases differ in technic from the Full Upper in so far as the tray is trimmed so that it only reaches up to and on the soft ridge but not beyond. The impression is taken as described in full upper, and the soft flabby ridge is pressed with the index finger back to its normal position and held there until the compound becomes hard. With the Kerr trace-on compound stick, which is the most practical for building or adding purposes, build up the labial or buccal portion of impression in region of flabby ridge; place impression in the mouth, holding it to place with finger of left hand, and with index finger of right hand gently press the soft compound up against soft ridge. The base impression will prevent the flabby ridge from turning in toward the palate and in this manner you will have reproduced the soft flabby ridge in its normal position. The impression is then finished as described in Full Upper.

Class E is that case which presents abnormally large condyles on both sides, as shown in Figure No. 23. It is, however, not infrequently found that on one side the condyle is of normal size and on the other side an abnormally large condyle exists, as shown in Figure No. 24.



FIG. NO. 23, CLASS E
Abnormally large condyles on both sides

Class E cases, where large condyles exist on both sides, the impression is taken the same as outlined in Full Upper, except that only one condyle is accurately reproduced while the condyle on the opposite side is reproduced by placing a piece of soft compound over the exposed condyle,



FIG. No. 24, CLASS E

Large condyle on one side and normal condyle on opposite side following the same principle as explained in partial upper.

In cases where only one condyle is abnormally large, the rim of that side of impression should

be built up and muscle trimmed completely before building up the opposite side. In removing impression from the mouth be certain first to release the side with normal condyle; when placing impression in the mouth insert the side with large condyle first and the impression will go to place without difficulty.



FIG. No. 25

Showing facial expression without upper impression in the mouth



FIG. No. 26

Showing facial expression with upper finished impression in mouth

CHAPTER II

FULL LOWER IMPRESSIONS

FOR taking lower impression, select a tray nearest in size to accommodate lower ridge. Soften compound as heretofore



FIG. No. 27

Showing roll of compound ready for attachment to tray

explained and roll it into stick form to about the thickness of three eighths of an inch, as shown in Figure No. 27. Stick it fast to tray by means of heating one side of roll of compound over alcohol or gas flame until it sizzles; attach the side so heated to tray, insert tray with compound so attached into the mouth without bringing any pressure to bear on ridge, hold in place for a minute,

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cool and remove from the mouth and place what we will call our compound impression tray into cold water until compound becomes perfectly hard, as shown in Figure No. 28. This insertion



FIG. No. 28

Compound on tray before insertion in mouth (on the right).
Compound impression tray after taken from mouth (on the left)

is made only for the purpose of obtaining an approximate outline of the ridge, which will serve as a guide and permit the compound tray with softened bite block in place to seat itself without assistance from the operator. Shape a roll of compound slightly smaller than that which was used for impression; have it long enough to reach from heel to heel. Heat end of roll on one side

and attach to heel portion of ridge of tray, then heat remaining portion of roll over small flame and attach to tray. While compound is semi-



FIG. No. 29

Showing roll of compound attached to ridge of tray before heating portion which constitutes impression before insertion into the mouth

soft, form the occlusal edge to more or less of a wedge shape, as shown in Figure No. 29. Heat that surface of compound which represents the impression over alcohol flame, and then pass the wedge-shaped, occlusal edge over flame once or twice. Quickly insert into the mouth, the upper



FIG. No. 30

Showing how lower impression with bite-block in place is inserted into the mouth

preliminary impression with the bite block being in place (or opposing teeth, whichever the case might be), as shown in Figure No. 30: instruct patient to swallow, and bring the jaws together



FIG. No. 31

Showing upper teeth imbedded into bite-block of lower impression after lips have touched in repose, thereby establishing automatically the correct bite

until the lips touch in repose, as shown in Figure No. 31. While in that position, instruct patient immediately to raise the tongue to the palatal surface of the upper bite block or teeth, and move



FIG. No. 32

Showing lips in smiling or laughing position with jaws held firmly together



FIG. No. 33

Showing lips in whistling position with jaws held firmly together

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the tongue from side to side (the mouth being closed while the tongue movements are accomplished. The operator can plainly see whether or not the patient is following instructions by watching the registrations directly beneath the chin, which are caused by the tongue movements). Then quickly move the lips as in smiling and whistling, as shown in Figures 32 and 33. Cool impression and bite block by means of ice water and remove impression from mouth.

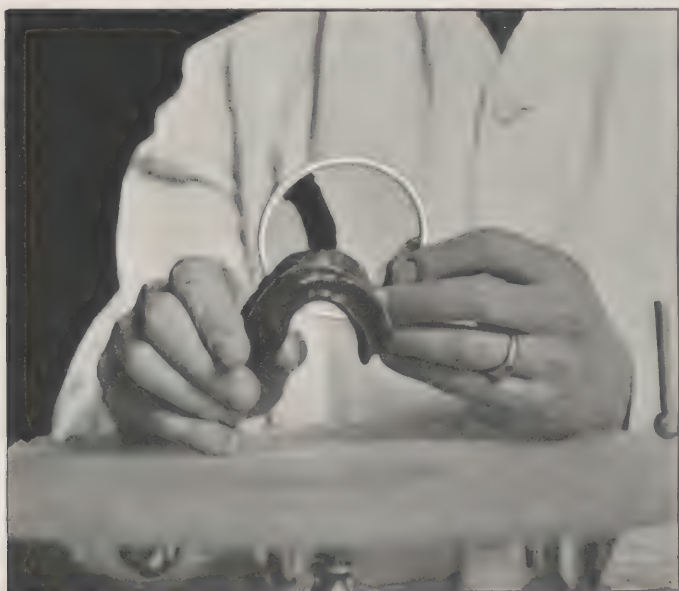


FIG. No. 34

Showing lower impression with bite-block trimmed so that only slight indentations appear

We now have a lower impression with bite accomplished under natural biting stress. Trim bite block so that only slight indentations of opposing teeth remain, as shown in Figure No. 34. Should there be any excess compound (that portion of compound which has curled up is excess), cut it away with a knife and reheat the margins so cut. Insert impression into the mouth and instruct patient to swallow and close in correct

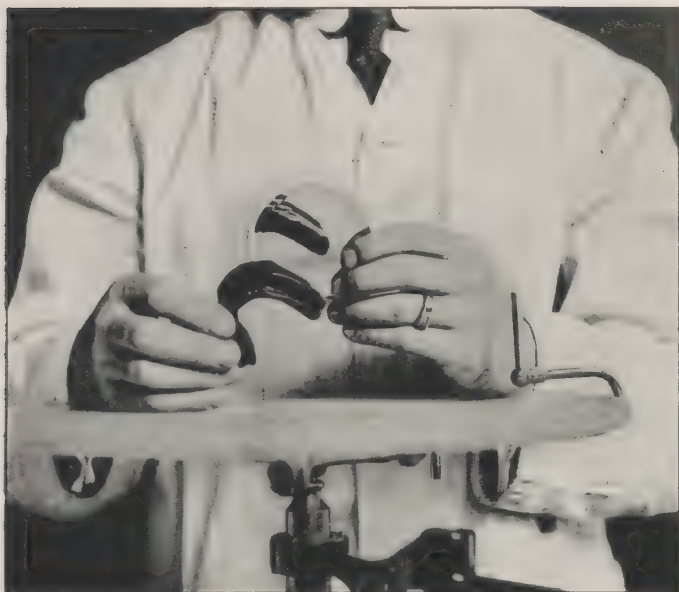


FIG. No. 35

Showing muscle trimmed impression with surplus cut away, thereby producing uniform thickness of rim

bite, and repeat tongue and lip movements as above. This step should be repeated where compound continues to curl up. Soften slightly compound of buccal rim in region of condyle on right and left side. Insert impression into the mouth and instruct patient to close in correct bite and exert pressure on both sides, which will serve to reproduce the action of the masseter as in biting, as shown in Figure No. 35.

All Full Lower cases are treated alike.

In the cases where the Full Upper and Full Lower teeth are to be supplied, the upper preliminary impression is first to be taken. A bite block is formed with a flat occlusal surface of the height represented by the lip length. With the blade of a small knife mark the medium line and corner lines on labial and buccal surfaces of bite block and remove preliminary impression with bite block so marked from the mouth; continue the three lines on the occlusal surface of bite block. Directly on the lines marked on the occlusal surface, trace on small V-shaped compound as shown in Figure No. 36; these will serve as bite guides when taking lower impression. The next step is to take lower impression and complete the same before muscle trimming

upper preliminary impression. By completing the lower impression first, the muscle trimming



FIG. No. 36

Showing V shapes on upper occlusal surface of bite block

of the upper is accomplished with the same ease as in the case where lower teeth are in place, as shown in Figure No. 37.



FIG. No. 37

Showing completed lower impression with upper V shapes reproduced in lower bite block

CHAPTER III

UPPER PARTIAL IMPRESSIONS

THE first step is to plan the type of denture to be supplied. Where clasps or adhesion are to be depended on to retain the denture, the following key will be found of great assistance for final diagnosis. In cases where the eight posterior teeth are to be supplied, it is advisable that clasps should *not* be relied upon for retention, and in that case the impression must extend to the rear third of the vault as in a full upper. In practically no case is it necessary to use clasps where a full palate plate is to be constructed. Where a horseshoe or roofless plate is desired, the author prefers the use of properly constructed clasps rather than to depend upon retaining the denture by means of contact with the natural teeth; such retention will be at the expense of all the teeth involved. Suffice it to say that the objection is well founded and is based upon practical tests.

The author's Nometal Tray facilitates the securing of a correct bite in all partial cases. This cannot be secured when using a metal tray, for the reason that the thickness of the metal tray interferes with upper and lower teeth occluding in proper relation.

All partials consist of the Base Impression and Face Piece (or Pieces).

For convenience of illustration we will first treat with the case where the bicuspid and molars are to be supplied.



FIG. No. 38

The biting surface of tray being adapted to occlusal surface of teeth. (For convenience of illustration models mounted on anatomical articulator are shown)

Adjust the tray as follows: Pass occlusal surface over gas or alcohol flame, dip the surface so heated in hot water, insert tray into the mouth and have patient close on tray, exerting slight pressure, thereby causing the biting sur-

face of tray to adapt itself to occlusal surfaces of the teeth. The tray so adapted will facilitate the taking of basic impression under normal biting pressure, as shown in Figure No. 38.

Soften compound as heretofore explained, form the soft compound into a ball and heat one side over a gas or alcohol flame until it sizzles. Attach the side so heated to tray; with wet fingers shape the soft compound into a cone, well forward in the center of tray, a depression all along where the alveolar ridge will come, and a relatively high rim to go up under the cheeks, disregarding the labial portion of the standing teeth. Immerse the tray portion in cold water which will serve to chill compound in contact with tray. Heat the entire surface of compound over gas or alcohol flame and dip surface so heated into hot water. This will serve to equalize the heat and avoid discomfort to patient. The tray with compound so prepared should be inserted into the mouth, in the same manner as it is proposed to insert the finished denture, carrying the tray partly to position, immediately instructing patient to close firmly onto the tray, driving impression the rest of the way to position. Instruct patient to hold the jaws

firmly closed, as shown in Figure No. 39. Insert finger into the mouth and press rim of compound on buccal surface upward against the



FIG. No. 39

Showing manner in which softened compound distributes itself under normal biting stress

ridge. That portion of compound which is found to encroach upon the labial surface of the standing teeth is removed with the blade of a small pen knife. The jaws should be kept firmly closed during this operation, permitting patient to open the mouth as soon as compound has become stone hard and *not sooner*. Remove

impression from the mouth. The next step is to muscle trim the buccal rim, and establish palatal length and proper adaptation. This is accomplished in the same manner as explained in full upper.

In cases where two or three teeth are to be supplied on each side in the posterior region, also several teeth in the anterior region, the principle is the same as described above, except in that the compound should extend up to and on the ridge between the standing teeth but not beyond the ridge, as the labial or buccal portion, whichever the case might be, will be reproduced with what we speak of as face piece or pieces.

ESTABLISHING CORRECT BITE

To permit the upper and lower teeth to meet in proper occlusion without interference of tray, the occlusal surface of tray directly beneath the



FIG. No. 40

Showing occlusal surface of tray removed beneath standing teeth to facilitate direct occlusion

standing teeth is removed by means of a vulcanite file or separating disc, viz.: dent the piece to be removed and it can readily be broken away, exposing compound underneath the piece of tray so removed, as shown in Figure No. 40, attach

a small roll of compound to that part of occlusal surface of tray which remains, soften the occlusal surface of the compound by passing over flame,



FIG. No. 41

Showing lower teeth in direct occlusion with upper

insert impression into the mouth, and instruct patient to swallow and bring the jaws together. The tray being properly trimmed, the lower teeth will imbed themselves into the softened compound until the upper and lower teeth practically touch, as shown in Figure No. 41. Cool compound by means of ice water and remove impression and bite from the mouth, remove ex-

cess compound from occlusal surface, insert impression with bite attached into the mouth, and have patient close in correct bite. Form a small



FIG. No. 42

Showing face pieces for reproduction of labial and buccal surfaces of teeth

roll of softened compound and place it under the lip opposite the labial border of standing teeth, draw the lip over the compound and press on the outside of lip with finger. This will conform compound over labial surface of teeth, as shown

in Figure No. 42. Allow compound to cool thoroughly. Remove the impression by taking hold of some part of that which constitutes the base impression, and remove it in the same man-



FIG. No. 43

Showing completed impression with face pieces which are to be waxed in position for model-making

ner as the finished denture is to be removed; the face-piece will either remain in position or will open up sufficiently to allow the impression to pass over the bell-shaped portion of the teeth.

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Immediately upon removing impression and face-piece from the mouth, care should be exercised in accurately placing the face-piece on the impression; when the compound is not thoroughly cooled the face-piece is apt to bend slightly and should be pressed back to position, as shown in Figure No. 43.

LOWER PARTIAL IMPRESSIONS

The technic as outlined in upper partial impressions is followed in lower partial impressions except muscle trimming, and this is accomplished precisely the same as muscle trimming in full lower, viz.: the act of swallowing, raising the tongue to the roof of the mouth and moving from side to side, lip and cheek movements (as in whistling and laughing) and masseter reproduction as in biting.

In cases where the bicuspid and molars are to be supplied, the author prefers a denture constructed with a lingual bar. The position of the bar is automatically established, for the reason that the sub-lingual attachments plainly indicate their highest point while talking, swallowing, etc., antero-lingually, and a bar placed on a cast made from this type of impression if bent properly to conform to the lingual border will prove most satisfactory.

The simplest and, in the opinion of the author, the best way to construct a bar is as follows: Take round wire of either 11 or 12 gauge B. & S. as per the requirements of the case in hand, form wire to fit lingual border, flatten the two ends and serrate ends where rubber attach-

74 ADVANCED IMPRESSION TAKING

ment is used. Place a thin piece of card bristol or wax of about 30 gauge over lingual border and set the round wire bar against the card bristol or wax and see that it is about one-eighth of an inch higher than is indicated by the sub-lingual attachments. The bar so placed will be certain to be free from interference with either the tissues or the tongue.

“CONVERTING THE IMPRESSION INTO A
FINISHED DENTURE”

Too much stress cannot be laid on the importance of the proper technic in the prosthetic end of the denture work. In order that an impression may be duplicated to the minutest detail in the form of a finished plate, it is necessary to follow an absolutely correct technic. First, it is important that a model be made of the impression from a material which will not change during the process of vulcanization. Second, that the model be so made that it will reproduce, to the minutest detail, the entire impression, including the thickness of rim and the extreme rear palatal length. Third, that the plate should *not* be filed at the rim or rear length of palate after it is taken out of the vulcanizer. If any one of these three procedures is not followed with perfect results, the entire work will be for naught; for the success of the denture depends entirely upon the duplication of the tested impression.

The author does not approve of the use of air chambers, reliefs or tin foiling the palatal portion of the model, as the two former will produce a vacuum which is undesirable and the latter will tend to cause sufficient change to impair the fit of the denture.

“SUGGESTIONS ON UPPER AND LOWER
IMPRESSIONS”

Should the tray become exposed through the compound, it indicates that that portion of tissue has been impinged. The exposed portion must therefore be filed, ground or scraped down and new compound added to cover it up. This added compound should then be heated and the impression reinserted in mouth and an impression of that portion of the *impinged* tissue taken.

When it is necessary to add compound to rim or any other part of impression, the most satisfactory results are obtained by immersing the entire impression in cold water after the soft compound with the Kerr Trace on Stick has been added. This will make the whole compound hard and facilitate the heating of the added portion. The even temperature of the immersed impression permits of an even expansion of the heated surface and avoids a lapping over of the soft compound which invariably occurs, when one portion of the impression is hard and the other soft.

When only one denture is to be made, be sure to take an impression of the opposing teeth. A

model is afterwards made of this impression and the teeth are set into the indentations formed by the opposing teeth on the Bite Block. This is necessary for mounting on the articulator.

A practical method of bringing the masseter muscles into action is to place the index fingers on the patient's right and left cheeks in the region of the condyles and instruct patient to bite hard, and then not so hard, repeating this two or three times. This is easily accomplished without the objectional method of opening and closing the mouth.

Clasps constructed with movable tails eliminate the necessity of crowning the tooth which is clasped, as the clasp will move independently of the plate and permit the natural movement of the tooth without interference from the clasps. If the clasp is properly fitted, it will not ride up and down the tooth and no abrasion will ensue. A properly constructed movable tail clasp averts a direct strain on the tooth so clasped, and thus insures against a weakening of the tooth.

The author has used the movable tail clasps with very satisfactory results, and a number of dentists who have used these clasps, at the author's suggestion, have pronounced them a suc-

cess. In order to obtain perfect results, it is essential that the proper material be used and that the technic of construction is thoroughly understood.

“ROOFLESS DENTURES OR PLATES”

The name Roofless Plate means a denture whose roof center is lacking. Nearly 50 per cent. of full upper cases might be made roofless.

A normal ridge and well defined condyles present a suitable case for the construction of a denture of this type. It is important also that the patient manifests a real desire for a roofless denture, as it requires greater perseverance to wear this kind of denture than the wearing of a full palate plate.

It must be understood that immediate satisfaction to the patient cannot be expected with a denture of this type. Unless your patient is of a persevering nature and is willing to help retain the denture for the first week or two, it would not be advisable to attempt the construction of a roofless plate.

The technic, as outlined in full upper, is followed precisely the same in the construction of a roofless plate, with the exception that the tray

should be fitted to cover only that portion of the palate which the finished denture is to cover.

It is inadvisable to end the palatal portion of the plate directly on a hard part. If the extreme center of the palate is hard, it is best to end the plate forward of that hard center.

THE END

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